



Energy
Information
Administration

Weekly Coal Production

Production for Week Ended:
February 1, 1992



Preface

The *Weekly Coal Production (WCP)* report provides weekly estimates of U.S. coal production by State. Supplementary data are usually published monthly in two supplements: the Coal Exports and Imports Supplement and the Domestic Market Supplement. The Coal Exports and Imports Supplement contains detailed monthly data on U.S. coal and coke exports and imports. The Domestic Market Supplement contains detailed monthly electric utility coal statistics, by Census Division and State, for generation, consumption, stocks, receipts, sulfur content, prices, and the origin and destination of coal shipments. This supplement also contains summary-level, monthly data for all coal-consuming sectors on a quarterly basis.

Preliminary coal production data are published quarterly, based on production data collected using Form EIA-6, "Coal Distribution Report." Based on 1988 through 1990 data, the coal production estimation error for a quarter at the national level (i.e., the difference between the sum of the weekly estimates for a quarter and the quarterly EIA-6 preliminary data) ranges from 1 percent to 4 percent for 1988, 1 percent to 2 percent for 1989, and 0.3 percent to 3 percent for 1990.

Final coal production data are published annually, based on the EIA-7A coal production survey. Based on 1988 through 1990 data, the revision error for a

quarter at the national level (i.e., the difference between the EIA-6 preliminary data and the EIA-7A final data) ranges from 0.02 percent to 0.08 percent for 1988, 0.09 percent to 0.14 percent for 1989, and 0.01 percent to 0.05 percent for 1990. Usually the EIA-7A coal production data are higher than the EIA-6 coal production data, due to the differences in the threshold reporting requirements.

This publication is prepared by the Survey Management Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration (EIA) to fulfill its data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of 1974 (P.L. 93-275) as amended. *Weekly Coal Production* is intended for use by industry, press, State and local governments, and consumers. Other publications that may be of interest are the quarterly *Coal Distribution*, the *Quarterly Coal Report*, *Coal Production 1990*, and *Coal Data: A Reference*.

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Photo Credit:

PacifiCorp
State Coal Profile

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Summary

This *Weekly Coal Production* report contains U.S. coal production estimates for the week ended February 1, 1992; December 1991 coal production estimates by State; and a summary of 1991 preliminary coal production estimates, by month for each coal-producing State. Revisions to monthly State coal production data for the second and third quarters of 1991 are reflected in the summary tables.

U.S. coal production in the week ended February 1, 1992, as estimated by the Energy Information Administration, totaled 20 million short tons. This was about the same as in the previous week and slightly lower than in the comparable week in 1991. Production east of the Mississippi River totaled 11 million short tons, and production west of the Mississippi River totaled 8 million short tons.

Preliminary 1991 Production

Coal production in 1991, as estimated by the Energy Information Administration, totaled 994 million short tons, which was 35 million short tons less than in 1990. For the fourth consecutive year, Wyoming was the top coal-producing State. West Virginia replaced Kentucky as the second-largest coal producer. Two States, Wyoming and Arizona, reached record levels of production in 1991.

The principal reason for the decrease in output in 1991 was that electric utilities increased coal stocks

only slightly, compared with a 19 million short tons stock build-up during 1990. Most of the decrease in national coal production occurred east of the Mississippi River, where coal production (including anthracite) dropped by 40 million short tons. Kentucky, Pennsylvania, Ohio and Indiana registered the largest production losses. Coal production in Kentucky, Pennsylvania, and Indiana declined primarily because electric utilities in those states drew down coal stocks in 1991 to meet coal-fired electricity demand, whereas in 1990 the utilities built up coal stocks. In Pennsylvania, other contributing factors to lower coal production were a decrease in demand for coal from foreign markets and from coke plants in the State. Ohio's coal production declined due to: lower demand for coal from electric utilities in Pennsylvania, West Virginia, and Alabama; less demand from foreign markets; and, a draw-down of coal inventories at producers and distributors in the State.

Coal production west of the Mississippi River reached a record level of 404 million short tons, which was 5 million short tons above the 1990 level. Wyoming accounted for the largest increase in Western production, 10 million short tons, which offset declines in production, mainly in New Mexico, Colorado, and Texas. The upswing in Wyoming coal production was primarily due to an increase in coal demand from electric utilities in Arkansas, Oklahoma, and Texas, and, to a lesser extent, to more demand for coal from export markets.

Figure 1. Coal Production

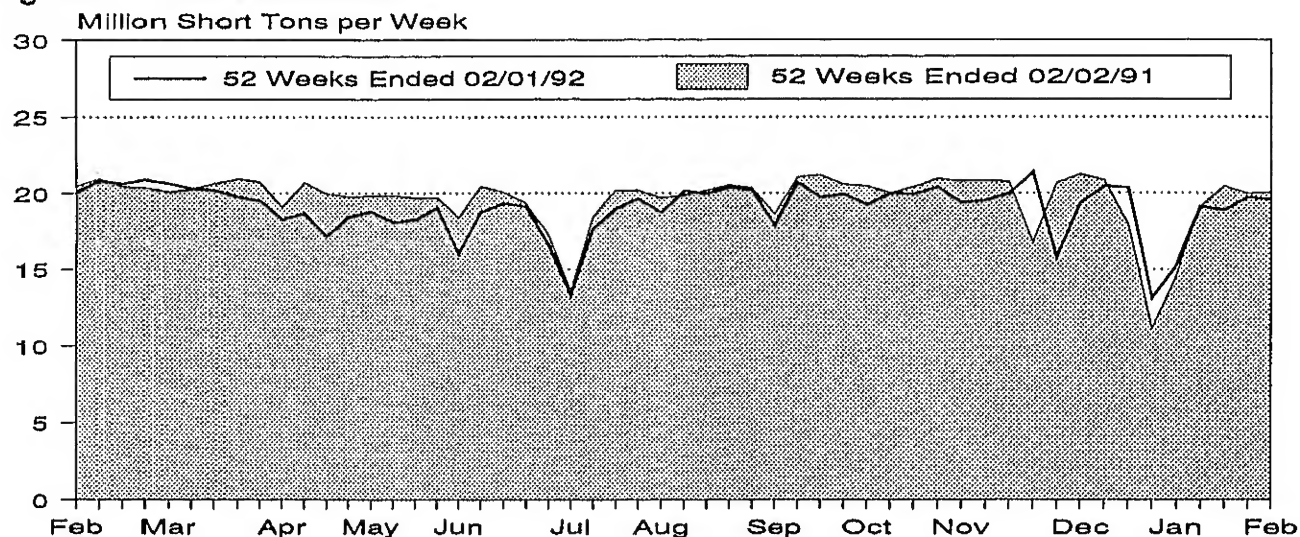


Table 1. Weekly U.S. Coal Production Overview

	Week Ended			52 Weeks Ended		Percent Change
Production and Carloadings	02/01/92	01/25/92	02/02/91	02/01/92	02/02/91	
Production (Thousand Short Tons)						
Bituminous Coal ¹ and Lignite . . .	19,521	19,692	20,027	985,859	1,017,256	-3.1
Pennsylvania Anthracite	56	43	57	2,872	3,453	-16.8
U.S. Total	19,577	19,736	20,084	988,731	1,020,709	-3.1
Railroad Cars Loaded	125,849	126,759	126,958	6,499,958	6,644,033	

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components because of independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Weekly U.S. Coal Production by Region and State
(Thousand Short Tons)

Region and State	Week Ended		
	02/01/92	01/25/92	02/02/91
Coal and Lignite			
the Mississippi	11,486	11,250	11,800
a	590	568	578
	1,164	1,227	1,256
	601	576	604
ky	2,935	2,977	3,090
cky, Eastern	2,126	2,180	2,321
cky, Western	809	797	768
id	66	67	73
	611	524	629
lvania Bituminous	1,313	1,067	1,175
see	90	94	104
	835	872	961
irginia	3,280	3,278	3,330
the Mississippi	8,034	8,442	8,226
	36	36	25
	226	228	274
as	*	*	*
lo	249	329	320
	7	8	7
	8	10	9
na	24	28	63
ri	42	43	38
a	824	827	763
exico	566	603	443
akota	624	626	653
ma	50	52	32
	993	1,001	1,015
	315	409	392
gton	97	97	101
ng	3,972	4,145	4,090
s and Lignite Total	19,521	19,692	20,027
nia Anthracite	56	43	57
	19,577	19,736	20,084

s subbituminous coal.

an 0.5 thousand short tons.

All data are preliminary. Totals may not equal sum of components because of independent rounding.

: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information
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tion reports.

Table 3. U.S. Coal Production by Region and State, December 1991
(Thousand Short Tons)

Region and State	December 1991	November 1991	December 1990	Year to Date		Percent Change
				1990	1989	
Bituminous Coal ¹ and Lignite						
East of the Mississippi	44,622	48,439	44,723	586,800	626,712	-6.4
Alabama	2,230	2,411	2,103	27,712	29,030	-4.5
Illinois	4,882	4,767	4,759	59,009	60,393	-2.3
Indiana	2,520	2,636	2,209	31,284	35,907	-12.9
Kentucky	11,916	12,800	12,789	156,563	173,322	-9.7
Kentucky, Eastern	8,817	9,134	9,528	115,146	128,396	-10.3
Kentucky, Western	3,098	3,665	3,260	41,417	44,926	-7.8
Maryland	277	288	251	3,744	3,487	7.4
Ohio	2,043	2,389	2,599	30,206	35,252	-14.3
Pennsylvania Bituminous	3,926	5,322	3,789	62,902	67,008	-6.1
Tennessee	367	378	401	4,627	6,193	-25.3
Virginia	3,383	3,486	3,390	44,153	46,917	-5.9
West Virginia	13,078	13,961	12,434	166,600	169,205	-1.5
West of the Mississippi	34,622	33,206	30,765	403,911	398,858	1.3
Alaska	152	158	178	1,457	1,706	-14.6
Arizona	912	939	963	12,614	11,304	11.6
Arkansas	3	3	4	49	59	-17.1
California	-	14	-	51	61	-16.7
Colorado	1,274	1,494	1,456	17,348	18,910	-8.3
Iowa	27	27	28	350	381	-8.1
Kansas	40	35	45	458	721	-36.5
Louisiana	248	305	201	3,116	3,186	-2.2
Missouri	194	202	178	2,243	2,647	-15.3
Montana	3,364	3,140	3,193	37,879	37,616	.7
New Mexico	1,975	2,189	1,465	22,436	24,292	-7.6
North Dakota	2,545	2,376	2,169	29,288	29,213	.3
Oklahoma	228	188	112	1,869	1,698	10.1
Texas	4,364	4,525	4,033	54,575	55,755	-2.1
Utah	1,617	1,713	1,628	21,249	22,058	-3.7
Washington	374	384	355	4,916	5,001	-1.7
Wyoming	17,306	15,514	14,760	194,015	184,249	5.3
Bituminous ¹ and Lignite Total	79,244	81,644	75,487	990,711	1,025,569	-3.4
Pennsylvania Anthracite	170	214	179	2,923	3,506	-16.6
U.S. Total	79,414	81,858	75,666	993,635	1,029,076	-3.4

¹Includes subbituminous coal.

Notes: 1991 data are preliminary. Totals may not equal sum of components because of independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Table 4. U.S. Coal Production by Region and State, January-June 1991
(Thousand Short Tons)

Region and State	January	February	March	April	May	June	January-June
Bituminous Coal¹ and Lignite							
East of the Mississippi	51,094	48,503	50,656	46,493	47,870	46,793	291,409
Alabama	2,419	2,150	2,265	2,349	2,480	2,383	14,045
Illinois	5,399	5,176	5,135	4,554	4,444	4,566	29,274
Indiana	2,625	2,498	2,706	2,447	2,392	2,407	15,076
Kentucky	13,710	13,232	13,390	12,017	12,433	12,177	76,958
Kentucky, Eastern	10,036	9,547	9,983	8,777	9,255	8,870	56,469
Kentucky, Western	3,674	3,684	3,407	3,239	3,178	3,307	20,490
Maryland	320	309	322	251	300	285	1,787
Ohio	2,704	2,570	2,707	2,507	2,547	2,514	15,550
Pennsylvania Bituminous	5,125	4,977	5,590	5,258	5,149	5,053	31,152
Tennessee	432	391	414	404	376	370	2,387
Virginia	4,004	3,635	3,844	3,226	3,736	3,666	22,112
West Virginia	14,357	13,566	14,281	13,479	14,013	13,371	83,067
West of the Mississippi	34,716	34,089	34,356	32,831	32,047	30,103	198,142
Alaska	97	104	107	125	126	122	680
Arizona	1,060	1,130	1,163	1,093	1,100	1,059	6,604
Arkansas	7	2	2	1	6	7	25
Colorado	1,714	1,657	1,466	1,535	1,477	1,353	9,202
Iowa	33	31	32	27	27	26	175
Kansas	53	39	40	40	41	39	252
Louisiana	233	214	253	211	188	179	1,277
Missouri	208	157	161	159	160	154	997
Montana	3,061	3,034	3,059	3,021	3,009	2,813	17,996
New Mexico	1,924	1,666	1,708	1,589	2,020	2,015	10,922
North Dakota	2,620	2,596	2,618	2,383	2,227	2,082	14,526
Oklahoma	133	123	105	124	140	142	767
Texas	4,508	4,185	4,306	4,199	4,226	4,069	25,493
Utah	2,013	1,963	1,750	1,832	1,801	1,674	11,033
Washington	358	419	431	367	369	355	2,298
Wyoming	16,694	16,770	17,156	16,125	15,131	14,016	95,892
Bituminous¹ and Lignite Total	85,810	82,592	85,012	79,324	79,917	76,896	489,551
Pennsylvania Anthracite	248	243	259	230	224	235	1,440
U.S. Total	86,058	82,835	85,271	79,554	80,141	77,131	490,991

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components because of independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Table 5. U.S. Coal Production by Region and State, July-December 1991
(Thousand Short Tons)

Region and State	July	August	September	October	November	December	July- December	January- December
Bituminous Coal¹ and Lignite								
East of the Mississippi	45,368	53,187	49,002	54,774	48,439	44,622	295,391	586,800
Alabama	1,919	2,442	2,138	2,526	2,411	2,230	13,666	27,712
Illinois	4,845	5,135	5,003	5,102	4,767	4,882	29,735	59,009
Indiana	2,590	2,598	2,640	3,223	2,636	2,520	16,208	31,284
Kentucky	12,557	14,775	13,202	14,354	12,800	11,916	79,605	156,563
Kentucky, Eastern	9,225	10,831	9,791	10,878	9,134	8,817	58,677	115,146
Kentucky, Western	3,332	3,944	3,411	3,477	3,665	3,098	20,927	41,417
Maryland	331	386	351	323	288	277	1,956	3,744
Ohio	2,221	2,649	2,395	2,959	2,389	2,043	14,657	30,206
Pennsylvania Bituminous	4,574	5,788	5,591	6,550	5,322	3,926	31,750	62,902
Tennessee	313	374	334	474	378	367	2,240	4,627
Virginia	3,437	4,096	3,658	3,980	3,486	3,383	22,041	44,153
West Virginia	12,581	14,942	13,689	15,282	13,961	13,078	83,533	166,600
West of the Mississippi	34,353	35,631	32,502	35,456	33,206	34,622	205,769	403,911
Alaska	92	104	97	174	158	152	776	1,457
Arizona	986	1,113	1,022	1,038	939	912	6,010	12,614
Arkansas	5	5	5	3	3	3	23	49
California	-	-	-	37	14	-	51	51
Colorado	1,187	1,418	1,266	1,507	1,494	1,274	8,145	17,348
Iowa	29	33	30	30	27	27	175	350
Kansas	27	29	27	48	35	40	206	458
Louisiana	350	299	295	342	305	248	1,839	3,116
Missouri	200	222	204	223	202	194	1,246	2,243
Montana	3,491	3,432	3,062	3,394	3,140	3,364	19,883	37,879
New Mexico	1,312	1,834	1,730	2,474	2,189	1,975	11,514	22,436
North Dakota	2,534	2,491	2,223	2,593	2,376	2,545	14,761	29,288
Oklahoma	191	179	165	151	188	228	1,102	1,869
Texas	4,797	5,429	4,966	5,000	4,525	4,364	29,081	54,575
Utah	1,644	1,858	1,672	1,711	1,713	1,617	10,216	21,249
Washington	461	508	468	424	384	374	2,618	4,916
Wyoming	17,048	16,678	15,269	16,308	15,514	17,306	98,123	194,015
Bituminous ¹ and Lignite Total	79,720	88,818	81,504	90,230	81,644	79,244	501,161	990,711
Pennsylvania Anthracite	253	313	285	248	214	170	1,483	2,923
U.S. Total	79,973	89,131	81,789	90,478	81,858	79,414	502,644	993,635

¹Includes subbituminous coal.

Note: All data are preliminary. Totals may not equal sum of components because of independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

State Coal Profile: Washington

Total Area of State:

68,192 square miles

Area Underlain by Coal:

1,150 square miles

Demonstrated Reserve Base of Coal:

(January 1, 1991)

1 billion short tons

(< 1 percent of U.S. total)

First Year of Documented Coal Production:

1848 (50 short tons)

Peak Year of Coal Production:

1988 (5.2 million short tons)

1990 Coal Production:

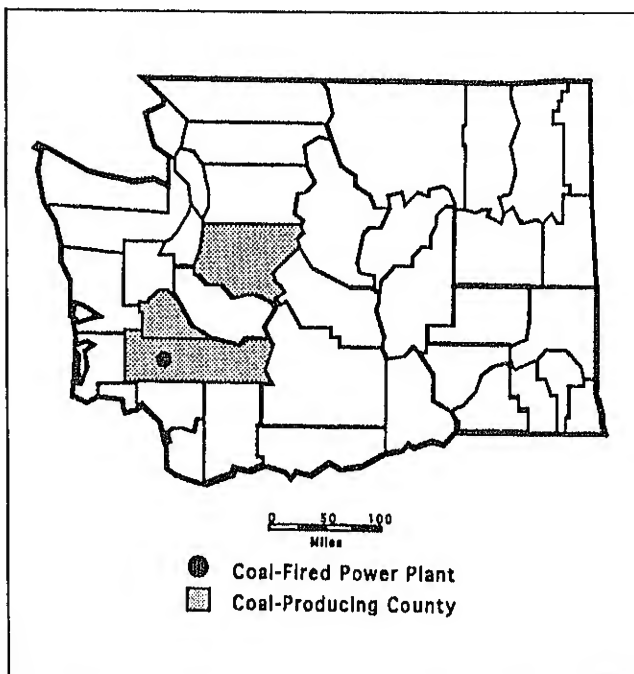
5 million short tons

(< 1 percent of U.S. total)

1990 Coal Consumption:

5 million short tons

(< 1 percent of U.S. total)



	Number	Percentage of U.S. Total
Number of Mines (1990)	2 ¹	< 1
Underground	0	-
Surface	2 ¹	< 1
Number of Miners (1990)		
(at mines producing more than 10,000 short tons)	777	1
Underground	0	-
Surface	777	2
Average Quality of Utility Coal Receipts (1990)	<u>Washington</u>	<u>U.S. Average</u>
Heat Content		
(million Btu per short ton)	16.3	20.9
Sulfur Content		
(percent by weight)7	1.3
Ash Content		
(percent by weight)	14.6	9.9

¹Four mines are reported in *Coal Production 1990*. This number includes one mine operating in two counties that was counted as two mines, and one mine that has become inactive.

Coal is an important part of the mineral economy of Washington. In 1990, coal was the second-highest valued mineral commodity produced in the State. The 5 million short tons of coal produced during the year accounted for an estimated 20 percent of the \$600 million value of all mineral commodities produced. Included in the coal output were 875,000 short tons mined from a Federal lease. This production generated \$174,000 in royalties, which were disbursed to the State and the Federal Government. Nationally, Washington was 18th among the 27 coal-producing States. Although coal is the only mineral fuel of economic importance produced in Washington, its role as an energy source is greatly overshadowed by the large amount of hydroelectric power available in the State.

The principal coal deposits in Washington occur in small areas that extend in a northerly direction in the western half of the State. The major economic coal deposits are located along the western slope of the Cascade Mountains. All ranks of coal, from lignite to anthracite, are present in Washington, but production consists predominantly of subbituminous coal, with a small amount of bituminous coal. Although some Washington coal is suitable for conversion to coke for metallurgical use, none has been mined for this purpose since World War II.

The coalbeds in Washington are commonly folded and faulted, features that hamper mining. Only a few areas are suitable for surface mining. The subbituminous coal produced has an average heat content of about 16 million Btu per short ton, a sulfur content of less than 1 percent (by weight), and an ash content of about 15 percent. The bituminous coal produced contains an average of 23 million Btu per short ton, less than 1 percent sulfur, and 8 to 16 percent ash. The high ash content characteristic of many coalbeds in Washington is due to volcanic ash that fell when the coal-forming plant material was deposited. In 1990, coal was mined from about 10 beds that range from 8 to 50 feet in thickness. More than 70 percent of the coal produced was from the Big Seam, which has an average thickness of about 26 feet.

The earliest recorded discovery of coal in Washington was in 1833, when an outcrop was reported along the Toutle River in what is now Cowlitz County. The first coal mine in the State was opened in 1853 near Bellingham, Whatcom County. Soon after, coal mining began in other areas, and by 1880 all of the State's major coal deposits were being mined. Coal production rose above 1 million short tons in 1888 and 2 million short tons in 1900. In 1918, Washington's coal output reached a peak of 4 million short tons, reflecting an increase in demand created by World War I. During the late 1800's and early 1900's, Washington coal was used by a variety of

consumers: railroads, electric utilities, cement mills, coke plants, briquette producers, smelters, and manufactured gas plants. Coal was also shipped to California.

After World War I, the trend in coal production turned downward as some consumers switched to oil and others turned to less expensive coal from Utah and Wyoming. In the 1930's, the coal industry suffered further losses due to the development of the State's large hydroelectric resources, which provided low-cost electricity. As a consequence, coal production dropped below 2 million short tons in the 1930's and eventually fell to 37,000 short tons by 1970.

In the 1960's, however, interest in Washington's coal was renewed when projections of future electricity requirements escalated beyond the capability of the State's hydroelectric plants. This led to the opening of the Centralia mine, a large surface operation covering parts of Lewis and Thurston counties, to produce subbituminous coal for the Centralia power plant of PacifiCorp, constructed near the mine in Lewis County. Coal is delivered to the plant by a conveyor belt system. In 1971, when the plant's first electric generating unit was placed in service, coal production rose above 1 million short tons. A year later, when a second generating unit began operating, the coal output more than doubled. Continuing to increase, Washington's annual coal production rose above 5 million short tons in 1977. Since then, it has ranged from slightly less than 4 million short tons to more than 5 million short tons.

Coal is currently produced in Washington only by surface mines, although in the past virtually all production was from underground mines. The last underground coal mine closed in 1976. The State's largest coal mine, the Centralia mine, is operated by a subsidiary of PacifiCorp. In 1990, the mine's output of 5 million short tons ranked it as one of the largest producing coal mines in the United States. The other operating coal mine in Washington is the John Henry No. 1 of Pacific Coast Coal Co., Inc., which produced 127,000 short tons of bituminous coal in 1990. This mine, opened in 1986, is located about 50 miles northeast of Centralia, in King County. More than 80 percent of the mine's output in 1990 was exported to Japan and Korea; the rest was used in Washington.

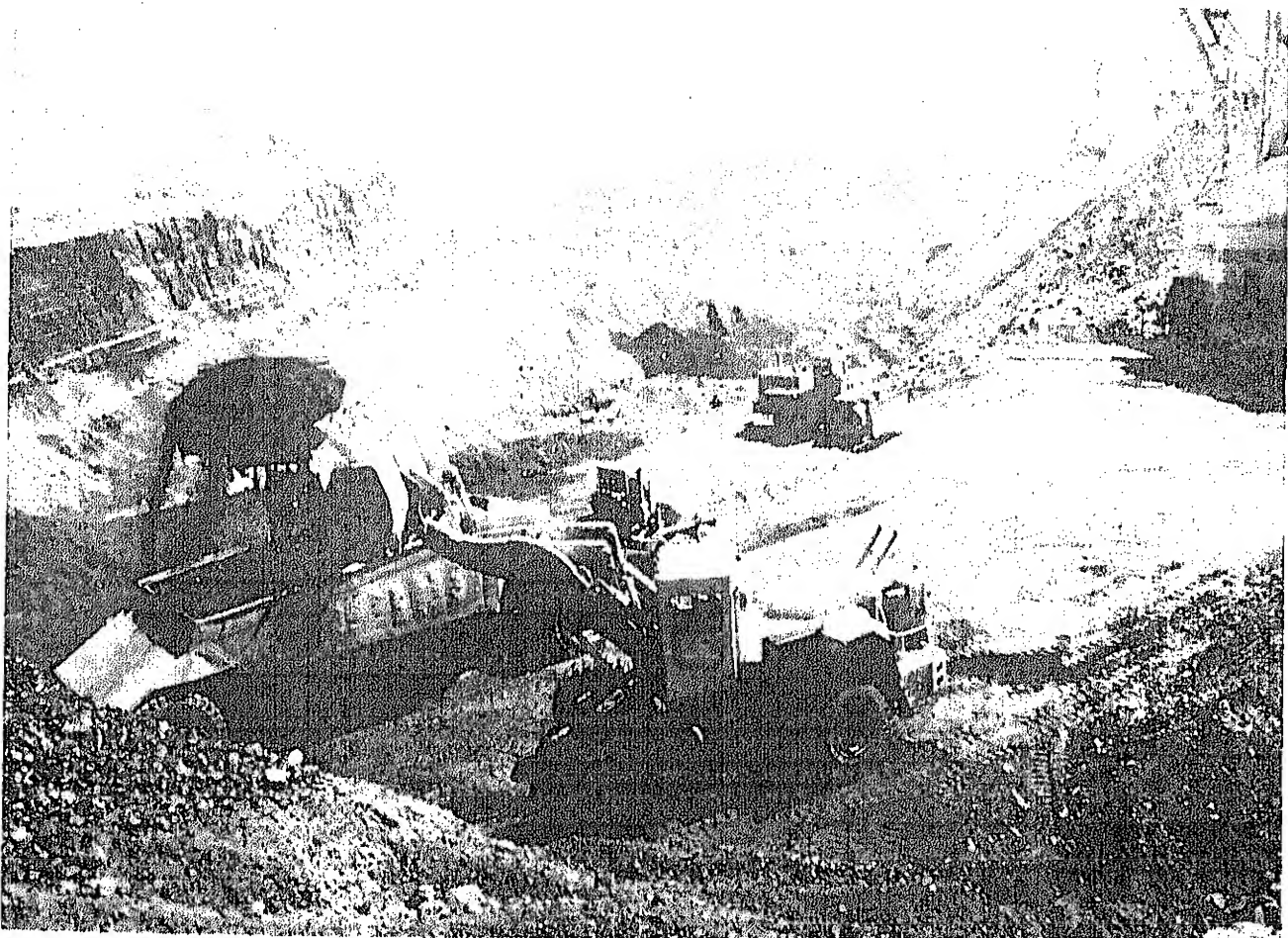
Mine productivity in Washington averaged 3.4 short tons per miner per hour in 1990. This was less than half the average for surface coal mines in the West, reflecting the difficult mining conditions encountered in Washington. Two coal preparation plants were in operation in the State. The largest, at the Centralia mine, can process 1,000 short tons per hour. The preparation plant at the John Henry No. 1 mine has a capacity of 150 short tons per hour.

Total coal consumption in Washington in 1990 was slightly more than 5 million short tons, ranking the State 35th in coal consumption. The Centralia power plant, the dominant coal consumer in the State, accounted for nearly 5 million short tons. Although virtually all of the coal consumed at the power plant was from the Centralia mine, the plant also burned small amounts of coal from the John Henry mine and from Wyoming. The fly ash collected from coal combustion at the power plant is sold as a concrete additive, and for a variety of other industrial uses. Coal consumption in the industrial sector totaled over 200,000 short tons of coal, about half of it from Utah and the rest mostly from Wyoming and Colorado. This coal was used chiefly to produce heat for manufacturing cement, pulp, and nonmetallic mineral products. A small amount of coal was sold for residential and commercial heating.

The Centralia plant is Washington's only coal-fired power plant. The plant's 1,310-megawatt summer generating capability represented 5 percent of the State's total generating capability in 1990. This was

slightly more than the share held by the only nuclear power plant in the State, the 1,100-megawatt Washington Nuclear Power (WNP) plant of the Washington Public Power Supply System, in Benton County. The generating capability of both the coal and nuclear power plants was greatly surpassed by the 20,954 megawatts available from the State's hydroelectric plants, which held 87 percent of the State's total generating capability. Nationally, Washington's hydroelectric generating capability was the largest of any State. With 6,494 megawatts of generating capability, the Grand Coulee hydroelectric plant, operated on the Columbia River by the U.S. Bureau of Reclamation, was the largest power plant of any type in the United States.

With water power abundant, electricity generation from coal, as well as from nuclear power, in Washington has been comparatively small. In 1990, coal was the source of 7,352 million kilowatthours, about 7 percent of the total 100,479 million kilowatthours generated in the State. Nuclear power supplied about 6 percent of the total.



The Centralia mine in Washington is one of the largest coal mines in the United States. The subbituminous coal produced is consumed at the Centralia power plant, shown in the background.

Coal production in Washington is expected to continue into the early 1990's at an average annual level of about 5 million short tons, used principally for electricity generation. The output from the John Henry No. 1 mine, however, increased to about 250,000 short tons in 1991 because a new preparation plant, completed in 1990, enabled the mine to operate at full capacity. Virtually all of the coal was exported to Japan and Korea.

In general, future development of Washington's coal deposits is hampered not only by their relatively limited size, but also by geologic conditions that make mining difficult and expensive. Some coal deposits are covered by thick glacial deposits, making them unsuitable for low-cost surface mining. However, several Federally sponsored projects on underground coal gasification near Centralia have demonstrated the feasibility of using this technology to extract energy from coalbeds that are uneconomical to mine. When coal is gasified in place, without mining, the combustible gas produced can be brought to the surface through wells and used as boiler fuel for generating electricity or for other purposes. Another potential energy source in Washington is coalbed methane, a resource estimated to range as high as 24 trillion cubic feet. Although a number of exploration wells have been drilled for coalbed methane, commercial production has not yet been established in the State.

References:

Energy Information Administration: *Coal Production* (various issues); *Quarterly Coal Report* (various issues) *Coal Distribution January-December 1990* (April 1991) *Cost and Quality of Fuels for Electric Utility Plants 1991* (August 1991); *Inventory of Power Plants in the United States 1990* (October 1991); *Electric Power Annual* (various issues). U.S. Department of the Interior Bureau of Mines, *State Mineral Summaries 1990* Minerals Management Service, *Mineral Revenues 1990* *Report on Receipts from Federal and Indian Leases* Washington Department of Natural Resources Division of Geology and Earth Resources: Henry W Schasse, personal communications (1992); "Coal Activity in Washington during 1990," *Washington Geology*, Vol. 19, No. 1, March 1991, pp. 26-27 "Coalbed Methane Potential of Whatcom and Skagi Counties, Washington," *Washington Geology*, Vol. 19 No. 4, December 1991, pp. 20-23; *The Mineral Industry of Washington—Highlights of its Development, 1853-1980* Information Circular 74 (1982); *Coal Reserves of Washington*, Department of Natural Resources, Division of Geology and Earth Resources, Bulletin 47 (1961 reprinted with addendum 1984); *Inventory of Washington Minerals, Part 1, Nonmetallic Minerals* Department of Conservation, Division of Mines and Geology, 2nd edition, Bulletin 37 (1960); *Coal and Coal Mining in Washington*, Washington Division of Mine and Mining, Report of Investigations No. 4R (1947) PacifiCorp: *The Centralia Coal Mine* (August 1991), and *Centralia Steam Electric Project* (1985). 1989 *Keystone Coal Industry Manual* (Chicago, IL: Maclean Hunter Publishing Co.). "The United States Coalbed Methane Resource," *Quarterly Review of Methane from Coal Seam Technology*, Vol. 7, No. 3 (March 1990), p. 27.

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